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Integrative Motivation as a Predictor of Achievement in the Foreign Language Classroom

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This study examines the relationship among five independent variables—integrative motivation, instrumental motivation, the need to fulfill a foreign language requirement, grade point average (GPA), and previous years studying Spanish—as predictors of five dependent variables: scores on a simulated oral proficiency interview (SOPI), final exam grades, final grades, the desire to enroll in Spanish courses after completing the language requirement, and intention to major in Spanish. Data from a questionnaire and a SOPI administered to 130 students enrolled in fourth-semester Spanish identified integrative motivation as a significant predictor of SOPI scores and final exam grades. Furthermore, integrative motivation was a significant predictor of students' desire to enroll in additional coursework after completing the four-semester foreign language requirement. It also had an important role in students' intention to major in the language. A negative relationship was found between the need to fulfill the language requirement and intent to continue with further studies in Spanish. The findings demonstrate that integrative motivation is important in predicting student achievement in the foreign language classroom.

Despite numerous studies identifying motivation as important to second language (L2) learning, few researchers have examined the specific conditions that connect motivation to students' L2 speaking proficiency. The present study is therefore unique in that it investigates the relationship between motivation and students' scores on a simulated oral proficiency interview (SOPI).¹

This study focused on five variables—integrative motivation, instrumental motivation, the need to fulfill a foreign language requirement, grade point average (GPA), and previous years studying Spanish—and their relationship to five distinct measures of L2 achievement.² Gardner and Lambert (1959) defined integrative motivation as an interest in learning the L2 in order to interact with the L2 group, as well as positive attitudes toward these people and their culture. Instrumental motivation suggested a desire to learn the L2 in order to fulfill a pragmatic objective, such as to enhance future career opportunities.

Subsequent research identified a positive relationship between integrative motivation and language achievement at different levels of instruction (Clément, 1980; Gardner, 1985, 2000; Gardner, Day, & MacIntyre, 1992; Gardner & Lambert, 1972; Gardner & MacIntyre, 1991, 1993; Gardner, Tremblay, & Masgoret, 1997; Masgoret & Gardner, 2003). For example, Gardner and Lambert (1972) investigated the relationship between integrative and instrumental motivation and the L2 achievement of students enrolled in French courses, reporting a significant positive correlation between integrative

motivation and achievement in French. Gardner, Tremblay, and Masgoret (1997) offered further evidence to support a relationship between integrative motivation and L2 achievement. Student achievement was measured by a 100-item multiple choice achievement test, a cloze test, a vocabulary test, a composition, and grades in French. The authors found a significant correlation between integrative motivation and each measure of L2 achievement. Ely (1986) then examined the extent to which the integrative and instrumental motivation paradigm could describe the motivation of first-year university students of Spanish. His factor analysis of responses to a questionnaire found three existing motivation factors: (1) integrative motivation, (2) instrumental motivation, and (3) the motivation provided by the need to fulfill the foreign language requirement. Finally, Ramage (1990) investigated the relationship between motivation and the desire to continue to enroll in French or Spanish courses after completing the second-year of high school. She determined that a positive relationship existed between interest in the L2 culture and intent to continue studying French or Spanish.

The present study further explores the role of motivation in the L2 classroom through an examination of the relationship among the aforementioned five variables and five outcomes: speaking proficiency, final exam grades, final course grades, desire to enroll in additional Spanish courses after completing the language requirement, and intention to major in Spanish. In particular, this study seeks to determine how motivation contributes to the development of L2 oral proficiency after controlling for GPA and previous years studying Spanish. The investigation will address the following five research questions:

Research Question 1: Does type of motivation predict SOPI scores after controlling for GPA and previous years studying Spanish?

Research Question 2: Does type of motivation predict final course grades after controlling for GPA and previous years studying Spanish?

Research Question 3: Does type of motivation predict final exam grades after controlling for GPA and previous years studying Spanish?

Research Question 4: Does type of motivation predict the desire to continue the study of Spanish beyond the four-semester foreign language requirement, after controlling for GPA and previous years studying Spanish?

Research Question 5: Does type of motivation predict the intention to declare a major in Spanish, after controlling for GPA and previous years studying Spanish?

Method

Participants

Participants consisted of 130 undergraduates completing a fourth-semester Spanish course at a large Midwestern university. The sample ($n = 130$) was selected at random from the population of students ($N = 384$) enrolled in fourth-semester Spanish in the spring semester of 2003. Fifty-two students (40%) were male and 78 (60%) were female. Their ages ranged from 18 to 24 years ($M = 20.34$, $SD = 1.78$). Twenty-two students (16.9%) had studied Spanish for two years at the secondary and post-secondary

levels, 17 students (13.1%) three years, 43 students (33.1%) four years, and 48 students (36.9%) for more than four years. A total of 47 students (36.2%) indicated their intention to continue Spanish studies upon fulfillment of the four-semester language requirement. There were 83 students (63.8%) who did not intend to take additional coursework, while 14 students (10.8%) declared Spanish as their major.

Assessment Instruments

Motivation Questionnaire: Students completed a 26-item questionnaire³ in the first week of March of 2003. The questionnaire (see Appendix A) consisted of two parts: Student Background Information and Motivation Index. The first part of the questionnaire included questions concerning gender, age, academic major, GPA, previous language experience, desire to enroll in further coursework in Spanish after completing the four-semester language requirement, and intent to major in Spanish. The second part⁴ consisted of three distinct subscales: integrative motivation, instrumental motivation, and the foreign language requirement. Using a 4-point Likert-type scale, students indicated the extent to which different reasons for studying Spanish were important to them.

Simulated Oral Proficiency Interview: To assess students' oral proficiency, a SOPI was administered during the third week of March of 2003. The SOPI consisted of a warm-up section and seven speaking tasks. In the warm-up, students answered questions in a simulated conversation with a native Spanish speaker. Students then responded to seven performance-based tasks. Their functions and ACTFL OPI levels were: (1) asking questions (Intermediate); (2) providing a simple description (Intermediate); (3) giving directions (Intermediate); (4) narrating in the present time (Advanced); (5) narrating in the past time (Advanced); (6) discussing personal activities (Intermediate); and (7) explaining a process (Advanced).⁵

Final Grade: The Spanish course was designed to provide students with practice in the four-skills. The evaluation criteria consisted of: classroom participation (5%); homework (10%); four written compositions (20%); four reading comprehension exams (15%); four listening comprehension exams (15%); a midterm exam (10%), two oral presentations (10%); and a final exam (15%).

Final Exam: The comprehensive final exam assessed students' overall achievement. All students completed the same final exam.

Both descriptive and inferential statistics were used to address the research questions. Statistical techniques included: (a) descriptive analysis, (b) simultaneous multiple regression analysis (research questions one, two, and three), and (c) logistic regression analysis (research questions four and five).

Results

This section reports the results of the motivation questionnaire, the SOPI scores, and the relationships among the five predictor variables and the five outcomes.

Motivation Questionnaire

Part II of the questionnaire consisted of three subscales: integrative motivation (nine items), instrumental motivation (three items), and the foreign language requirement (two items). Scores on each of these subscales were calculated.⁶ Students' scores on

the integrative motivation subscale (maximum score = 27) ranged from one to 27 ($M = 15.45$, $SD = 6.33$). Scores on the instrumental motivation subscale (maximum score = 9) ranged from zero to eight ($M = 3.88$, $SD = 2.41$). The foreign language requirement subscale (maximum score = 6) provided scores ranging from zero to six ($M = 4.83$, $SD = 1.85$).

SOPI Scores

Students’ scores on the SOPI⁷ are shown in Table 1. The mean for the SOPI was 4.18 and the standard deviation was 0.68. SOPI scores ranged from novice high to intermediate high. Table 1 indicates that 72 out of 130 students (55.38%) received a rating of intermediate low, 38 students (29.23%) received a rating of intermediate mid, 18 students (13.85%) were rated novice high, and 2 students (1.54%) were rated intermediate high.

Table 1. Means, Standard Deviations, Frequencies, and Percentages on the SOPI

<i>ACTFL Oral Proficiency Level</i>	<i>Assigned OPI Value</i>	<i>Frequency</i>	<i>Percentage</i>
Intermediate High	6	2	1.5
Intermediate Mid	5	38	29.2
Intermediate Low	4	72	55.5
Novice High	3	18	13.8
		----	-----
N = 130		130	100 %
Mean = 4.18			
SD = .68			

Simultaneous multiple regression analyses⁸ were performed in order to determine the significant predictors of SOPI scores, final course grades, and final exam grades. Students’ raw scores on the integrative motivation, instrumental motivation, and the foreign language requirement motivation subscales were entered as independent predictor variables. The SOPI scores, final course grades, and final exam grades were entered as the dependent variables. GPA (see item 5 in Appendix A) and previous years studying Spanish (see item 6 in Appendix A) were entered as the control variables.

Research Question 1: Does type of motivation predict SOPI scores after controlling for GPA and previous years studying Spanish?

The prediction for the SOPI scores is presented in Table 2. The multiple regression model was significant $R^2 = 0.25$, $F(5, 124) = 8.47$, $p < 0.001$.

Table 2. Simultaneous Multiple Regression Model Predicting the SOPI Scores

Variable	<i>r</i>	β	<i>t</i>	<i>p</i>
Integrative Motivation	.433	0.333	3.782	<0.001
Instrumental Motivation	.183	0.063	0.760	0.449
FL Requirement	-0.259	-0.127	-1.534	0.128
GPA	0.210	0.196	2.517	0.013
Previous Spanish	0.225	0.111	1.356	0.178

As shown in Table 2, integrative motivation ($\beta = 0.333$, $t = 3.782$, $p < 0.001$) was identified as the single significant predictor of SOPI scores after controlling for students' GPA ($\beta = 0.196$, $t = 0.196$, $p = 0.013$) and previous years studying Spanish ($\beta = 0.111$, $t = 1.356$, $p = 0.178$). Instrumental motivation ($\beta = 0.063$, $t = 0.760$, $p = 0.449$) and foreign language requirement ($\beta = -0.127$, $t = -1.534$, $p = 0.128$) were not identified as significant predictors.

Research Question 2: Does type of motivation predict final course grades after controlling for GPA and previous years studying Spanish?

Table 3 presents the prediction for the final course grades. The multiple regression model was significant $R^2 = 0.33$, $F(5, 124) = 12.07$, $p < 0.001$.

Table 3. Simultaneous Multiple Regression Model Predicting Final Course Grades

Variable	<i>r</i>	β	<i>t</i>	<i>p</i>
Integrative Motivation	0.243	0.162	1.933	0.056
Instrumental Motivation	0.027	-0.039	-0.497	0.620
FL Requirement	-0.175	-0.120	-1.531	0.620
GPA	0.503	0.496	6.723	<0.001
Previous Spanish	0.174	0.107	1.374	0.172

However, as shown in Table 3, none of the predictor variables were identified as significant predictors of final course grades after controlling for GPA ($\beta = 0.496$, $t = 6.723$, $p < 0.001$) and previous years studying Spanish ($\beta = 0.107$, $t = 1.374$, $p = 0.172$). Integrative motivation ($\beta = 0.162$, $t = 1.933$, $p = 0.056$), instrumental motivation ($\beta = -0.039$, $t = -0.497$, $p = 0.620$) and foreign language requirement ($\beta = -0.120$, $t = -1.531$, $p = 0.128$) were not significant predictors.

Research Question 3: Does type of motivation predict final exam grades after controlling for GPA and previous years studying Spanish?

The prediction for final exam grades appears in Table 4. Again, the multiple regression model was significant $R^2 = 0.37$, $F(5, 124) = 14.29$, $p < 0.001$.

Table 4. *Simultaneous Multiple Regression Model Predicting Final Exam Grades*

<i>Variable</i>	<i>r</i>	β	<i>t</i>	<i>p</i>
Integrative Motivation	.239	0.191	2.349	0.020
Instrumental Motivation	-0.033	-0.094	-1.232	.220
FL Requirement	-0.104	-0.048	-0.627	0.532
GPA	0.543	0.533	7.438	<0.001
Previous Spanish	0.185	0.121	1.611	0.110

As indicated in Table 4, integrative motivation ($\beta = 0.191$, $t = 2.349$, $p = 0.020$) was identified as a significant predictor of students’ final exam grades after controlling for GPA ($\beta = 0.533$, $t = 7.438$, $p < 0.001$) and previous years studying Spanish ($\beta = 0.121$, $t = 1.611$, $p = 0.110$). Instrumental motivation ($\beta = -0.094$, $t = -1.232$, $p = .220$) and foreign language requirement ($\beta = -0.048$, $t = -0.627$, $p = 0.532$) were not identified as significant predictors.

Research Question 4: Does type of motivation predict the desire to continue the study of Spanish beyond the four-semester foreign language requirement, after controlling for GPA and previous years studying Spanish?

Logistic regression analysis was performed in order to determine the significant predictors of students’ desire to continue the study of Spanish. As with the simultaneous multiple regression analyses, students’ raw scores on the integrative motivation, instrumental motivation, and foreign language requirement motivation subscales were entered as independent predictor variables. Desire to continue the study of Spanish after completing the four-semester foreign language requirement (see item 9 in Appendix A) was entered as the dependent variable.⁹ GPA and previous years studying Spanish were entered as the control variables. The results of the logistic regression are presented in Table 5. The logistic regression model was significant $\chi^2(5) = 68.54$, $p < 0.001$.

Table 5. Logistic Regression Model Predicting the Desire to Continue the Study of Spanish

Predictor	B	SE B	Wald	e^B	Confidence Interval
Integrative Motivation	0.229**	0.053	18.662	1.258	1.133 to 1.395
Instrumental Motivation	-0.009	0.109	0.006	0.992	0.800 to 1.229
FL Requirement	-0.527**	0.149	12.581	0.590	0.441 to 0.790
GPA	0.342	0.529	0.418	1.408	0.499 to 3.970
Previous Spanish	0.662*	0.260	6.476	1.938	1.164 to 3.225
Constant	-5.617				

Note. e^B = exponentiated B or odds ratio. The log likelihood of deviance $-2\ln(L) = 101.57$

Cox and Snell $R^2 = 0.410$. ** $p < 0.001$. * $p < 0.05$.

Integrative motivation and the foreign language requirement were identified as significant predictors of students' decisions to continue taking Spanish. There was a positive relationship between integrative motivation and the students' desire to continue in Spanish courses. As shown in Table 5, for each unit increase in integrative motivation, the odds ratio ($e^B = 1.258$) that a student would continue the study of Spanish increased by 25.8%. In contrast, a negative relationship was found between the foreign language requirement and students' desire to continue their studies in Spanish. For each unit increase in foreign language requirement (see Table 5), the odds ratio ($e^B = 0.590$) that the student would continue to take Spanish courses after fulfilling the language requirement decreased by 41.0%.

Research Question 5: Does type of motivation predict the intention to declare a major in Spanish, after controlling for GPA and previous years studying Spanish?

Logistic regression analysis was also conducted to determine the significant predictors of students' intention to major in Spanish. As with the previous logistic regression, students' raw scores on the integrative motivation, instrumental motivation and foreign language requirement subscales were entered as independent predictor variables. Intent to study toward a major in Spanish (see item 10 in Appendix A) was entered as the dependent variable.¹⁰ GPA and number of total years studying Spanish were again entered as the control variables. Table 6 presents the results of the logistic regression. The logistic regression model was significant $\chi^2(5) = 41.91, p < 0.001$.

Table 6. *Logistic Regression Model Predicting the Intention to Declare a Major in Spanish*

Predictor	B	SE B	Wald	e^B	Confidence Interval
Integrative Motivation	0.333**	0.101	10.814	1.396	1.144 to 1.702
Instrumental Motivation	-0.143	0.201	0.503	0.867	0.584 to 1.286
FL Requirement	-0.475*	0.203	5.457	0.622	0.418 to 0.926
GPA	0.158	0.802	0.039	1.171	0.243 to 5.636
Previous Spanish	1.194	0.621	3.702	3.301	0.978 to 11.140
Constant	-11.988				

Note. e^B = exponentiated B or odds ratio. The log likelihood of deviance $-2\ln(L) = 46.92$

Cox and Snell $R^2 = 0.276$. ** $p < 0.001$. * $p < 0.05$.

Integrative motivation and the foreign language requirement were identified as significant predictors of students’ decisions to major in Spanish. There was a positive relationship between integrative motivation and the students’ intention to study toward a major in Spanish. As indicated in Table 6, for each unit increase in integrative motivation, the odds ratio ($e^B = 1.396$) that a student would major in Spanish increased by 39.6%. In contrast, a negative relationship was found between the foreign language requirement and students’ intention to pursue a major in Spanish. For each unit increase in foreign language requirement (see Table 6), the odds ratio ($e^B = 1.171$) that the student would major in Spanish decreased by 37.8%.

Discussion

The results are unique in providing solid evidence that integrative motivation is important for stimulating students’ L2 speaking proficiency. This investigation thus provides strong support for the relationship between integrative motivation and different measures of achievement in the L2 classroom.

Simultaneous multiple regression analysis identified integrative motivation as a significant predictor of students’ SOPI scores even after controlling for GPA and previous years studying Spanish. The results of this first research question demonstrate that students with higher integrative motivation received higher SOPI scores. This result expands upon previous research on the relationship between integrative motivation and L2 achievement. As Masgoret and Gardner (2003) note, previous studies have, for the most part, focused on the relationship between motivation and measures of L2 achievement such as self-rating scales, written examinations, and course grades. Here, the SOPI, a standardized test of speaking proficiency, was used as one of the measures of L2 achievement.

The author believes that performance-based exams such as the SOPI or the OPI are better able to demonstrate the effect of motivation on L2 performance.

The second research question sought to determine if integrative motivation, instrumental motivation, and the foreign language requirement were significant predictors of final course grades after controlling for GPA and previous years studying Spanish. Simultaneous multiple regression analysis indicated that motivation was not a significant predictor. Rather, the results identified GPA as the best predictor of students' final course grades. An examination of the components of the final grade revealed that coursework did not include a performance-based measure of L2 oral proficiency. In designing an L2 course, instructors should therefore incorporate performance-based measures into the assessment procedures in order to better develop students' L2 proficiency.

The third research question addressed the role of integrative motivation, instrumental motivation, and the foreign language requirement in predicting students' final exam grades. Simultaneous multiple regression analysis identified integrative motivation as a significant predictor of final exam grades. Again, this relationship was found after controlling for GPA and previous years studying Spanish. Students with higher integrative motivation received higher final exam grades. This result is consistent with previous research indicating a positive relationship between integrative motivation and L2 achievement (Gardner, Day, & MacIntyre, 1992; Gardner & Lambert, 1972; Gardner & MacIntyre, 1993; Masgoret & Gardner, 2003).

The fourth and fifth research questions investigated the relationship between motivation and persistence in foreign language studies after controlling for GPA and previous years studying Spanish. Logistic regression analysis identified integrative motivation as a significant predictor of students' desire to continue further coursework in Spanish after completing the four-semester language requirement. There was also a negative relationship between the language requirement and students' desire to enroll in additional Spanish courses. These results indicate that students with higher integrative motivation were more interested in continuing their studies in Spanish after their fourth-semester course. Logistic regression analysis further identified integrative motivation as a significant predictor of students' intention to declare a major in Spanish. Students with higher integrative motivation were more interested in pursuing Spanish as their academic major.

Conclusion

The present study demonstrates four major points. First, integrative motivation is critical for the development of students' L2 oral proficiency. Second, the results indicate that integrative motivation does indeed contribute to students' desire to take further coursework in the language. Third, integrative motivation has a significant role in students' decision to declare a major in the L2. Fourth, there is a positive relationship between integrative motivation and final exam grades. Instructors should therefore promote integrative motivation as an avenue to increase student achievement.

The *Standards for Foreign Language Learning* (National Standards, 1999) provide instructors with a framework for attending to integrative motivation in the L2 classroom. First, instructors can foster integrative motivation with activities that require students to interview native or near-native speakers of the L2 and then present their interviews to the class (National Standards 1.1, 1.2, 1.3, 2.1, 3.1, 3.2, 4.2, 5.1). Second, the sustained use of authentic materials provides students with meaningful opportunities to interact with the L2 culture. The integration of these materials into the L2 classroom

is a key component of the National Standards and is also effective in increasing students' integrative motivation. Third, instructors can further enhance integrative motivation through the use of multimedia—the Internet, e-mail, radio, L2 satellite television, and computer software programs—that allow students to experience and interact with the L2 culture (Standards 1.1, 1.2, 1.3, 3.1, 3.2, 5.1). Skype, for example, allows students to participate in conversations with native speakers of different L2 communities (Coffey and Banhidi, 2007). Fourth, the integration of a service-learning component further allows students to interact with native speakers and thus provides instructors with numerous opportunities to address the National Standards (Hellebrandt & Varona, 1999).

In addition to promoting integrative motivation, instructors should also address instrumental aspects of motivation in the language classroom. Instructors should invite guest speakers to the classroom to discuss topics such as: (1) career opportunities using the L2, (2) the current status as well as the future of the L2 in the United States and abroad, and (3) current events (Standards 1.1, 1.2, 3.1, 3.2, and 5.1).

Instructors should further administer a questionnaire at the beginning of the semester to inquire about students' interests regarding their L2 studies. Activities that address these areas can then be included in the course design. Instructors should assist students in establishing realistic goals and expectations for their L2 studies, as well as discuss with them the importance of participating in extracurricular language activities and study abroad opportunities.

In summary, this study has demonstrated that integrative motivation is a significant predictor of student achievement in the L2 classroom. A future L2 motivation research agenda might include examining the relationship between integrative motivation and the achievement of students of other L2s: Is integrative motivation an important variable for these students? Do extracurricular opportunities with the L2 group influence the development of integrative motivation? Researchers should also investigate the relationship between motivation and the linguistic and non-linguistic outcomes of students in a study abroad environment. Further research should also determine the importance of specific teaching strategies in fostering motivation. Such research has the potential to enhance the L2 learning experience for all students.

Questionnaire

Part I. Student Background Information

1. Gender:
 - a. Male
 - b. Female
2. Age: _____
3. Academic status:
 - a. Freshman
 - b. Sophomore
 - c. Junior
 - d. Senior
 - e. Other (please specify) _____

4. Academic major:
 - a. Business
 - b. Education
 - c. Engineering
 - d. Liberal Arts & Sciences
 - e. Other (please specify) _____

5. Cumulative grade point average in all undergraduate courses: _____

6. Number of TOTAL years studying Spanish:
 - a. 0-1
 - b. 1+ to 2
 - c. 2+ to 3
 - d. 3+ to 4
 - e. 4+

7. Number of years studying Spanish at the high school level:
 - a. 0-1
 - b. 1+ to 2
 - c. 2+ to 3
 - d. 3+

8. Have you spent more than three months in a Spanish-speaking region before?
 - a. Yes
 - b. No

9. Do you plan to take Spanish beyond the four-semester foreign language requirement?
 - a. Yes
 - b. No

10. Do you plan to study toward a major in Spanish?
 - a. Yes
 - b. No

11. Are you of Hispanic descent?
 - a. Yes
 - b. No

12. Did you speak Spanish in your home?
 - a. Yes
 - b. No

Part II. Motivation Index

Use the following scale to indicate the degree to which the following reasons for studying Spanish are important to you.

Rating Scale:

0 = not important

1 = slightly important

2 = moderately important

3 = very important

I am taking Spanish because...

13. I want to use Spanish when I travel to a Spanish-speaking region.

0 1 2 3

14. I need to study a foreign language as a requirement for my major.

0 1 2 3

15. I want to be able to converse with Spanish speakers in the United States.

0 1 2 3

16. I am interested in Hispanic culture, history, or literature.

0 1 2 3

17. I feel that Spanish may be helpful in my future career.

0 1 2 3

18. I want to be able to use it with Spanish-speaking friends / acquaintances.

0 1 2 3

19. I need Spanish to fulfill the foreign language requirement.

0 1 2 3

20. I want to be able to speak more languages than just English.

0 1 2 3

21. I want to learn about another culture to understand the world better.
- 0 1 2 3
22. Spanish may make me a more qualified job candidate.
- 0 1 2 3
23. I think foreign language study is part of a well-rounded education.
- 0 1 2 3
24. I feel that Spanish is an important language in the world.
- 0 1 2 3
25. I feel that knowledge of Spanish will give me an edge in competing with others.
- 0 1 2 3
26. I want to communicate with native speakers of Spanish.
- 0 1 2 3

Notes

1. Research has found a positive relationship between motivation and different L2 achievement measures such as self-ratings of proficiency, objective tests, and course grades (Masgoret & Gardner, 2003). Few studies have investigated the relationship between motivation and global measures of L2 performance such as a SOPI or oral proficiency interview (OPI).

2. A different aspect of this investigation appeared in Hernández (2006) in which the relationship among three variables—integrative motivation, instrumental motivation, and the need to fulfill a foreign language requirement—and two measures of L2 achievement was studied.

3. A factor analysis was performed to test the validity of the questionnaire. The factor analysis yielded three factors with eigenvalues greater than 1.0. Eigen values were 6.525 for Factor 1 (integrative motivation), 1.696 for Factor 2 (instrumental motivation), and 1.260 for Factor 3 (FL requirement motivation). Cronbach alpha coefficients were computed on the questionnaire's three subscales to estimate the consistency of scores. The alpha coefficients were high, ranging from 0.85 to 0.90. See Hernández (2006) for further discussion of these statistical analyses.

4. The second part of the questionnaire was adapted from Ely (1986).

5. See the *ACTFL Proficiency Guidelines—Speaking. Revised 1999* (2006) for a complete description of the ACTFL proficiency scale.

6. See Hernández (2006) for a complete description of the results of the motivation questionnaire.

7. The SOPI was administered and scored with the assistance of the SOPI self-instructional training kit (Center for Applied Linguistics, 1995). The performance of each student on the SOPI was assigned a rating on the ACTFL proficiency scale. These ratings were then converted into numerical values for the purpose of data analysis: novice low = 1, novice mid = 2, novice high = 3, intermediate low = 4, intermediate mid = 5, intermediate high = 6, advanced low = 7, advanced mid = 8, advanced high = 9, and superior = 10. The numerical values assume that the ACTFL scale represents an interval scale with equal intervals between proficiency levels. See Hernández (2006) for a more complete description of the rating procedures.

8. The simultaneous multiple regression tables show: the Pearson correlation of the predictor with the outcome measure (r); the standardized regression coefficient (β); the t statistic showing the significance of the standardized regression coefficient (t); and the p value of the t statistic (p). Significance was set at the level of $p < 0.05$.

9. Responses on item 9 were coded as 0 if the student did not intend to continue Spanish and as 1 if the student intended to keep taking Spanish courses.

10. Responses on item 10 were coded as 0 if the student did not intend to major in Spanish and as 1 if the student intended to major in Spanish.

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